PROJECT NUMBER: 5001
PROJECT TITLE: Packaging Studies
PROJECT LEADER: H. R. Dunaway
PERIOD COVERED: October, 1987

PACKAGING STUDIES

A. **Objective**: Assist New Products Directorate in evaluating new packaging concepts and products, and provide technical packaging support to Manufacturing, Manufacturing Services, Engineering, Purchasing, and Quality Assurance.

B. **Status/Plans**:

1. **Project Fox**: The most recent box samples from Nypro continue to contain large amounts of hydrocarbons and prove to be subjectively unacceptable. Since these samples were made, Nypro has modified the mold to permit double gating which will allow them to lower process temperature and reduce resin degradation and odor. Confidentiality agreements are being implemented with resin and pigment suppliers so that material compositions may be divulged while attempts to reduce volatiles continue. Nypro is also investigating additional process modifications that possibly could help drive off existing volatiles. The next sample run will incorporate several non pigmented resins, and if one is found to be acceptable, pigment will be blended with the same material in order to eliminate additional volatiles.

2. **Project Fresh**: Sample box blanks have been ordered with new green and gold inks to reduce ink rubbing and cracking problems. Inner foil with new ink to eliminate the foil adhering to itself has been received. These materials will be subjectively evaluated provided that machine testing is favorable.

3. **Cigarette Case Overwrap**: The twelve week environmental test has been completed and a report is in progress. The data indicates that carton overwrap greatly enhances OV retention under hot/dry conditions, and as would be expected, foil performs somewhat better than polypropylene. Overwrapping the case, rather than individual cartons, with polypropylene provides comparable protection.

4. **Scented Tear Tape**: Considerable reduction in peel strength over time indicates that delamination of the tape is taking place regardless of environmental conditioning. Currently in progress is a comparison of 4mm strips stored under the same conditions, with those taken from packages, to determine the effect of the packing process itself.

5. **Vaassen Foil**: Six week environmental testing under Lab, Jungle, Desert, and Cold conditions showed samples from this new foil supplier to be comparable to control foil from Golden Belt.

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6. **Archer Foil Laminated by Golden Belt**: Environmental testing of this material, as well as subjective evaluation of cigarettes packaged with the material, show it to be comparable to Golden Belt's control foil.

7. **Foil Oxidation**: Six week environmental testing on packages using Reynolds foil, from a lot which showed oxidation on the bobbin while stored under summer warehouse conditions, has been completed. Results indicate that if oxidation is not visible when the foil is used to package cigarettes, it does not occur within the pack after six weeks storage under Lab, Jungle, Desert, or Cold conditions.

8. **Taste-Odor-Stale Customer Complaints**: Marlboro KS SP cigarettes conditioned to OV's of 8.4, 10.4, 11.8, and 14.5 (500 each) were provided to PED for evaluation on the M/C panel.

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